Plug-in Terminal Block - Official Commercial BESS Technical Overview & Datasheet

PLUG-IN TERMINAL BLOCK: OFFICIAL COMMERCIAL BESS TECHNICAL OVERVIEW & DATASHEET

EXECUTIVE SUMMARY

As a leading global energy storage solutions provider, we introduce the Plug-in Terminal Block (PTB) series — a high-reliability, tool-less interconnection solution purpose-built for utility-scale and Commercial & Industrial (C&I) Battery Energy Storage Systems (BESS). Engineered to eliminate wiring errors, reduce installation time by up to 70%, and withstand extreme vibration, humidity, and thermal cycling, the PTB series ensures durable, low-resistance connections across DC busbars, battery rack interfaces, and PCS terminals.

SYSTEM ARCHITECTURE & SAFETY

The Plug-in Terminal Block adopts an integrated spring-clamp technology combined with touch-proof safety shutters. The architecture supports hot-swappable battery module insertion, self-cleaning contact surfaces, and secondary locking levers to prevent accidental disconnection under dynamic grid conditions. Designed for outdoor-rated enclosures (IP67 mating face), the PTB series eliminates exposed high-voltage conductors during maintenance cycles.

KEY FEATURES

- Tool-less Installation: Lever-operated spring-clamp mechanism reduces cabling time by 70% and eliminates torque wrench dependency.

- Anti-Vibration Locking: Secondary latch with audible click confirmation ensures stable connection under seismic events (tested to IEC 60068-2-6).

- High Current Density: Supports up to 200A per pole with 1500V DC rated voltage (IEC 62852 compliant).

- Finger-safe Design: IP2X touch-proof housing and integrated arc-flash suppression shutter.

- Hybrid Termination: Accepts both ferrules and bare copper/aluminum conductors (6 AWG to 2/0 AWG).

- Thermal Monitoring Ready: Optional integrated thermistor port for BMS overtemperature detection.

COMPLIANCE & STANDARDS

All Plug-in Terminal Blocks are certified under IEC 60947-7-1, IEC 62852 (DC application), UL 4128 (energy storage connectors), and RoHS/REACH environmental directives. The product family holds TÜV Rheinland and Intertek ETL marks for global acceptance. Additionally, the PTB series passes salt mist corrosion testing per IEC 60068-2-52 (severity level 5).

TECHNICAL SPECIFICATIONS

Parameter	**Specification**

Rated Voltage (DC)	1500 V (IEC 62852 / UL 4128)
Rated Current	200 A per pole (ambient 40°C)
Conductor Cross-section	10 mm² to 70 mm² (6 AWG to 2/0 AWG)
Pollution Degree	3 (IEC 60947-1)
Ingress Protection	IP20 (unmated) / IP67 (mated)
Temperature Range	-40 °C to +85 °C (storage and operation)
Mating Cycles	≥ 500 cycles (electrical & mechanical)
Contact Resistance	< 0.2 mΩ (initial)
Flammability Rating	UL94 V-0
Locking Mechanism	Secondary lever + audible click

INDUSTRIAL DEPLOYMENT

Typical applications include battery rack-to-busbar interconnection, PCS DC input terminals, pre-assembled skid BESS wiring harnesses, and modular battery cabinet field replacements. The PTB series reduces commissioning time by 2-3 hours per MWh and lowers total cost of ownership through reduced labor and eliminated torque verification steps.


Battery Charge
Internal Temperature
Flow